

### REMARKS/ARGUMENTS

Initially, Applicants would like to express appreciation to the Examiner for the detailed Official Action provided.

Applicants submit that the instant amendment is proper for entry after final rejection. Applicants note that no question of new matter or any new issues are raised by entry of the instant amendment of the claims, and that no new search would be required.

Moreover, Applicants submit that the instant amendment places the application in condition for allowance, or at least in better form for appeal.

Accordingly, Applicants request that the Examiner enter the instant amendment, consider the merits of the same, and indicate the allowability of the present application and each of the pending claims.

Upon entry of the above amendments, claim 1 will have been amended. Claims 1 and 13-19 are currently pending. Applicants respectfully request reconsideration of the outstanding rejections, and allowance of all the claims pending in the present application.

#### ***Listing of the Rejections under 35 U.S.C. 102 and 103***

In the Official Action, the Examiner rejected claims 1 and 13 under 35 U.S.C. 102(b) as being anticipated by FUKASAWA et al. (EP 0306613);

the Examiner rejected claims 14-17 under 35 U.S.C. 103(a) as being unpatentable over FUKASAWA; and

the Examiner rejected claims 18 and 19 under 35 U.S.C. 103(a) as being unpatentable over FUKASAWA in view of KANNO et al. (U.S. Patent No. 4,201,673).

Without acquiescing to the propriety of the Examiner's rejections, Applicants submit that claim 1 has been amended solely in order to expedite prosecution of the presently claimed invention.

In this regard, Applicants note that none of the applied prior art, alone or in any properly reasoned combination, discloses at least the combination of features recited in independent claim 1.

In particular, amended claim 1 generally sets forth a hollow fiber membrane type fluid treatment device including, inter alia, a housing head portion which is connected with one end of the housing body portion and has a resin layer where the hollow fiber membrane bundle is fixed by using a resin composition, and a connection port which serves as a treatment liquid inlet; a housing head portion which is connected with the other end of the housing body portion and has a resin layer where the hollow fiber membrane bundle is fixed by using a resin composition, and a connection port which serves as a treatment liquid outlet; header caps attached to the housing head portions and having respective treatment target liquid connection ports; and an inner surface of a body portion of the tubular housing at the side of a treatment liquid inlet comprises a body straight portion and an end tapered portion which increases in diameter toward the end face of the housing body portion, and the hollow fiber membranes are arranged so that a distance between the hollow fiber membranes is gradually increased toward the end face on the treatment liquid inlet side along a taper of a tapered portion of the inner surface of the housing body portion, and opening ends of the hollow fiber membrane bundle being fixed to an inside of the housing by the resin layers, and the opening ends of the hollow fiber membrane bundle facing the respective treatment target liquid connection ports such that a liquid to be treated flows within the hollow fiber membranes, and the treatment liquid inlet and treatment liquid outlet

being provided at a circumference of the hollow fiber membrane bundle such that a treatment liquid flows outside of the hollow fiber membranes. "

In setting forth the rejections, the Examiner asserts, inter alia, that FUKASAWA discloses treatment target liquid connection ports 23, 25 and a connection port 27 which serves as a treatment liquid inlet (see, bullets 2 and 4 in paragraph 1 on page 2 of the Official Action).

However, contrary to the Examiner's assertions, Applicants submit that the presently claimed invention is very different structurally from the devices of the applied prior art.

More specifically, Applicants submit that port 27 in FUKASAWA is provided at a circumference of the membrane bundle 17 and at a position which is upstream of the wall 19 (see, e.g., Figure 8 of FUKASAWA).

In this regard, Applicants submit that, in the artificial lung of FUKASAWA, the liquid to be treated (blood) flows *outside* of the hollow fibers and the treatment liquid (gas, oxygen, or air) flows through the hollow fibers in order to remove carbon dioxide from the blood and add oxygen to the blood.

Thus, Applicants submit that FUKASAWA, alone or in any properly reasoned combination, does not disclose at least the presently claimed opening ends of the hollow fiber membrane bundle being fixed to an inside of the housing by the resin layers, and the opening ends of the hollow fiber membrane bundle facing the respective treatment target liquid connection ports such that a liquid to be treated flows within the hollow fiber membranes, and the treatment liquid inlet and treatment liquid outlet being provided at a circumference of the hollow fiber membrane bundle such that a treatment liquid flows outside of the hollow fiber membranes, as recited in amended claim 1.

Further, Applicants submits that, in the apparatus of FUKASAWA, if a treatment target liquid (e.g., blood) were to flow inside of the hollow fiber membranes (as the Examiner suggests) the flow resistance would rise to a level where the apparatus would *not* be functional. Accordingly, Applicants submit that the apparatus of FUKASAWA *must* be designed such that gas or liquid having a low flow resistance flows inside the hollow membranes.

Accordingly, Applicants submit that the rejections of claims 1 and 13-19 under 35 U.S.C. §§ 102 and 103 are improper and should be withdrawn.

In view of the arguments herein, Applicants submit that independent claim 1 is in condition for allowance. With regard to dependent claims 13-19, Applicants assert that these claims are allowable on their own merit, as well as because they depend from independent claim 1 which Applicants have shown to be allowable.

Thus, it is respectfully submitted that all of the claims in the present application are clearly patentable over the references cited by the Examiner, either alone or in combination, and an indication to such effect is respectfully requested, in due course.

SUMMARY

Applicants submit that the present application is in condition for allowance, and respectfully requests an indication to that effect. Applicants have argued the allowability of the claims and pointed out deficiencies of the applied references. Accordingly, reconsideration of the outstanding Official Action and allowance of the present application and all the claims therein are respectfully requested and is now believed to be appropriate.

Applicants note the status of the present application as being an after final rejection and with respect to such status believes that there is a clear basis for the entry of the present amendment consistent with 37 C.F.R. § 1.116. Applicants note amendments after final are not entered as a matter of right; however, Applicants submit that the present amendment does not raise new issues or the question of new matter. Moreover, the present amendment clearly places the present application in condition for allowance.

Applicants submit that this amendment is being made to advance prosecution of the application to allowance and should not be considered as surrendering equivalents of the territory between the claims prior to the present amendment and the amended claims. Further, no acquiescence as to the propriety of the Examiner's rejection is made by the present amendment. All other amendments to the claims which have been made in this amendment, and which have not been specifically noted to overcome a rejection based upon the prior art, should be considered to have been made for a purpose unrelated to patentability, and no estoppel should be deemed to attach thereto.

Should the Examiner have any questions or comments regarding the present response or this application, the Examiner is respectfully invited to contact the undersigned at the below listed number.

Respectfully submitted,  
Makoto FUKUDA et al.



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